**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | |
|---|---|
| In re application of: Baumann et. al. ) | Examiner: Allen J. Flanigan |
| Serial No.: 10/755,632 ) | Group Art Unit: 3744 |
| Confirmation No.: 1072 ) | Docket No.: 06-0561 |
| ) | |
| For: HIGH CONDUCTIVITY FINSTOCK ) | Filed: January 12, 2004 |
| ALLOY, METHOD OF MANUFACTURE ) | |
| AND RESULTANT PRODUCT ) | |

October 15, 2007
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to a final rejection Office Action, Applicants filed an Appeal in the above-captioned case. The Examiner filed an Examiner's Answer ("Examiner's Answer") on August 14, 2007. 37 CFR 41.41(a)(1) provides for a 2 month period for reply to the Examiner's Answer, i.e. by October 14, 2007.

This Applicant's Reply Brief is filed on October 15, 2007. As October 14, 2007 falls on a Sunday, Applicant's Reply Brief is thus filed within two (2) months of the mailing date of the August 14, 2007 Office Action.

Accordingly, this Applicant's Reply Brief is being timely filed.

# APPELLANT'S REPLY BRIEF

This reply brief incorporates by reference sections 1. through 7. and the Claims Appendix filed in the June 4, 2007 Appellant's Amended Brief on Appeal in the above-captioned matter.

Subject Of The Appellant's Reply Brief

The Examiner's Answer notes that "The following ground(s) of rejection are applicable to the appealed claims: For the convenience of the board, the grounds of rejection and explanations set forth in the previous office actions will be reiterated herein. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Kawahara et. al[1]. and US Patent #6,660,108 to Doko et. al. (hereinafter "Doko '108")." Thus, Appellant respectfully submits that no new grounds of rejection are found in the Examiner's Answer.

Argument

## I. The Examiner's Combination Of The Kawahara '265 And Doko '108 References Is Without Merit In Light Of Kawahara '265's Teaching Away

The Examiner's Answer states that "Appellant cites ***In re Rouffet*** for the proposition that "there must be some teaching, suggestion, or motivation in the prior art or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. This formulation of statute and case law regarding obviousness has been rejected by the Supreme Court. See ***KSR v. Teleflex*, 82 USPQ2d 1385.**"

[1] E.g. U.S. Patent No. 6,620,265, issued to Kawahara et. al ("Kawahara '265").

Appellants respectfully disagree to the extent that *KSR* controls the disposition of this case. It remains improper to modify references where the reference teaches away from the proposed modification. *See In re Graselli,* 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). In its recent *KSR* decision, the Supreme Court reiterated the validity of its pre-*Graham* precedent regarding assertion of obviousness based on the combination of elements found in the prior art. Citing *United States v. Adams,* 383 U.S. 39, 40 (1966), the Supreme Court restated the "corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR Intern. Co. v. Teleflex Inc.,* 127 S.Ct. 1727, 1740 (2007).

Moreover, recently-published guidelines (October 10, 2007) published by the United States Patent and Trademark Office make this point clear. *See* 72 FR 57526 - 57535 ("Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 In View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*"):

> Note that combining known prior art elements is not sufficient to render the claimed invention obvious if the results would not have been predictable to one of ordinary skill in the art. **"When the prior art teaches away from combining certain known elements, discovery of successful means of combining them is more likely to be nonobvious."**

(Page 57529, col. 3 (emphasis added)). Thus, the *KSR* decision reaffirms the primary basis for Appellant's argument -- that is, that Kawahara '265 teaches away from the Examiner's suggested combination of Kawahara '265 and Doko '108.

In addition, prior art references must be considered in their entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.,* 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert.*

*denied,* 469 U.S. 851 (1984); *See also* MPEP 2141.03. As detailed below, when considered in light of *KSR* and *Gore*, the Examiner's contention that Kawahara '265 and Doko '108 may be combined is without merit.

**A. Kawahara '265 Teaches Away From Use Of An Alloy Having Greater Than 2% Iron (Fe) Content**

**At page 4 of the Examiner's Answer, the Examiner concedes that the "ranges taught in Kawahara et. al overlap the claimed range with the exception of iron (Fe) content" [emphasis added].**

To overcome the failure of Kawahara '265 to teach, suggest or disclose the claimed iron range -- the express limitation of "greater than 2.0 to about 2.4% Fe" found in curently-pending independent claims 1, 10, and 14 -- the Examiner states that "Doko '108, for example, show that the use of Fe content in a range of 1.5 - 2.2% is known in the art for improved mechanical strength and thermal conductivity; thus it would have been obvious to one of ordinary skill in the art at the time the instant invention was made that Fe content in Kawahara '265's alloy could be increased above 2.0%." (Examiner's Answer, page 5)

The Examiner also cites col. 9, lines 17 -21 of the Kawahara '265 specification, which reads as follows:

> Mn reacts with Fe simultaneously added in a large amount, to form an Al-Mn-Fe(--Si)-series compound, which suppresses an Al-Fe compound that works as a cathode side, from depositing, to improve self-corrosion resistance

and characterizes this portion of the Kawahara '265 specification as follows:

> Thus, one skilled in the art would expect that the potential disadvantage of adding slightly more Fe could be offset by increasing the Mn content to the upper end of

> the recommended range of 0.6% - 1.8% so that the problem of Al-Fe compound formation (and early crystallization potentially causing breakage problems cited above) would be suppressed as this passage teaches." (Examiner's Answer, page 7).

Thus, the Examiner's argument ignores the express teaching found in Kawahara '265 not to increase Fe content above 2.0 %. Rather, the Examiner's position is that (1) this express teaching of Kawahara '265 should be ignored; and (2) it would be obvious to increase the Fe content of Kawahara '265 to above 2.0% based on Doko '108.

The Examiner's position is without merit.

**First, the Kawahara '265 reference must be taken as a whole.** Kawahara '265 so considered teaches two principal disadvantages of the use of Fe in an amount greater than 2.0%: first, that usage of such a percentage of Fe will result in decreased droop resistance; and second, that usage of such a percentage of Fe will result in decreased corrosion resistance.

For example, the Kawahara '265 reference discloses that:

> On the other hand, **an increased Fe content results in crystallization of a large quantity of intermetallic compounds**, which works as recrystallization nuclei when the fin material recrystallizes by brazing, to form fine recrystallization textures. Since this fine recrystallization texture involves many crystal grain boundaries, a problem is caused that the brazing material diffuses along the crystal grain boundaries during the brazing step, **thereby decreasing the droop resistance of the fin material.** (col. 1, ll. 47-59 (emphasis added))

For example, the Kawahara '265 reference further discloses that:

> The **fine material according to the present invention is only possible** to be manufactured by **satisfying all the alloy conditions** and manufacturing conditions, **which are defined in the present invention.** (col. 8, lines 56-60).

For example, the Kawahara '265 reference further discloses that:

> Since **maximum amount of Fe** as a solid solution is small, **it is crystallized** as an intermetallic compound during the casting step. (col. 9, ll. 63-65).

For example, the Kawahara '265 reference further discloses that:

> **Mn, Fe and Si are essential elements** in the present invention **as described above.** The fin material having the following features can be obtained by satisfying **all the combination of the amounts of addition of these elements** and manufacturing conditions **to be described hereinafter.** The fin material maintains high heat conductivity, in spite of its high content of Mn; it is excellent in self-corrosion resistance, core-crack resistance, roll workability and fin-melt resistance, despite of its high content of Fe; and it is excellent in fin-melt resistance and fin-break resistance and maintains high heat conductivity, despite of its high content of Si. (col. 10, l. 66, col. 11, l. 9).

Taken together, the entire disclosure of the Kawahara '265 reference teaches away from any use of a weight percentage of Fe greater than 2.0% for the reasons that droop resistance and corrosion resistance may both be lowered.

**Second, Kawahara '265 teaches and suggests addition of Mn to the disclosed alloy only to the extent that the percentage of Fe present in the alloy is 2% or less.** Kawahara '265 clearly teaches and suggests that an alloy having greater than 2% Fe results in unacceptable breakage. „ . For example, col. 10, ll. 16-21 (emphasis added) of Kawahara '265 modifies the passage of Kawahara '265 (col. 9, ll. 17-21)(emphasis added) cited by the Examiner by disclosing:

> **According to the reasons described above,** the **content of Fe is defined to be more than 1.2% by mass and 2.0% by mass or less.** The effect for preventing heat conductivity from decreasing by adding Mn is not sufficiently manifested when the Fe content is 1.2% by mass or less, while **the Al--Fe-series compound crystallizes at an early stage when the Fe content exceeds 2.0% by mass,** thereby decreasing the self-corrosion resistance. **These crystallized materials arise break of the fin material during the cold-roll step and cutting of the fin in assembling the core, besides decreasing the droop resistance and fin-melt resistance by**

> **making crystallized materials fine.** A Fe content of 1.3% by mass or more is preferable for enhancing the mechanical strength, while a Fe content of 1.8% by mass or less is preferable for decreasing the content of Fe in the intermetallic compound, thereby enhancing the self-corrosion resistance.

See also Appellant's Amended Brief on Appeal, pp. 9-10.

**Third, the Examiner's statement, relying on col. 9, lines 17 – 21 of the Kawahara '265 specification, that** "one skilled in the art would expect that the potential disadvantage of adding slightly more Fe could be offset by increasing the Mn content to the upper end of the recommended range of 0.6% - 1.8%" is mere speculation and thus, improper. When read in context, this statement only teaches and suggests that this specific reaction applies only when the iron content is not greater than 2:

- The **fine material according to the present invention is only possible** to be manufactured by **satisfying all the alloy conditions** and manufacturing conditions, **which are defined in the present invention**. (col. 8, lines 56-60).

- Since **maximum amount of Fe** as a solid solution is small, **it is crystallized** as an intermetallic compound during the casting step. (col. 9, ll. 63-65)

- **Mn, Fe and Si are essential elements** in the present invention **as described above.**

**B. Kawahara '265 Teaches Away From Use Of An Alloy Containing Nickel (Ni)**

At pages 7 – 8, the Examiner states that:

> Appellants comment on Doko '108 by stating that Doko '108 "disclose an Al-Ni-Fe alloy", which is "far removed" and "metallurgically different" from Applicant's claimed alloy. Appellants overlook the fact that Alloy C of Doko '108 contains both Fe and Mn, and also the fact that the claims employ the nonlimiting term "comprising", which permits the presence of other components in the scope of the claims; thus, claim 1 for example would read on an Al-Ni-Fe-

> Si-Mn alloy containing any Ni content. It is further noted that Appellant discloses embodiments which contain Ni, just as Doko '108 does.

The Examiner's position is without merit.

First, **Kawahara '265 teaches away from the use of a nickel-containing alloy.** As noted *supra* , Kawahara '265 must be taken as a whole. For example, Column 1, lines 60-67 of Kawahara '265 (emphasis added) characterizes alloys containing nickel as follows:

> An **Al--Fe--Ni-series alloy fin material** (JP-A-7-216485 ("JP-A" means unexamined published Japanese patent application), JP-A-8-104934, and the like), which is proposed other than the above-described Al--Mn-series alloy fin material, is excellent in mechanical strength and heat conductivity. **However, the alloy is not suitable for thinning, because self-corrosion resistance of the fin material itself is lowered.**

As Kawahara '265 provides an express admonition **against** the use of Ni in a suitable alloy, Kawahara '265 teaches away from combining Kawahara '265 with a reference that is a "Al-Ni-Fe alloy fin material" -- e.g. Doko '108.

Second, **citation of Appellant's own disclosure is impermissible hindsight, relying on knowledge gleaned only from applicant's disclosure.** The Examiner's attempt to remedy Kawahara '265's teaching away from Ni - containing alloys relies entirely upon Appellant's own disclosure (e.g. claims employing the term "comprising" and certain embodiments) as a "road map" to combine the Kawahara '265 and Doko '108 references. Such a combination (whether explicitly found in Appellant's specification or by implication from Appellant's disclosure alone) constitutes impermissible hindsight. *See In re McLaughlin,* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971); MPEP 2145.

Moreover, the Examiner's argument relating to "the fact that Alloy C of Doko '108 contains both Fe and Mn, and also the fact that the claims employ the nonlimiting term 'comprising', which permits the presence of other components in the scope of the claims; thus, claim 1 for example would read on an Al-Ni-Fe-Si-Mn alloy containing any Ni content" (Examiner's Answer, p. 8), misstates the law of whether it improper for one skilled in the art to combine patents. Actually, the law is whether the combination of prior art references is proper – not whether the claims may include an alloy "containing Ni content." Thus, as cited above and based on the express teachings in Kawahara '265, an alloy "containing Ni content" would have a detrimental effect on the alloy. As such, other than employing improper hindsight, the Examiner has provided no support why a person of ordinary skill in the art would look to Doko '108 so as to improperly ignore the teachings of the Kawahara '265 and, instead, improperly modify the Kawahara '265 with an increase of the iron content.

## CONCLUSION

The above arguments establish that all of the claims on appeal are enabled, definite and patentable over the substantive grounds of rejection raised in the Final Rejection. In addition, the above arguments establish that the Examiner's employment of impermissible hindsight to combine the Kawahara '265 and Doko '108 references fails to remedy the primary deficiency in the Examiner's argument-- that is, that Kawahara '265, taken **as a whole**, explicitly teaches away from any putative combination with Doko '108. Appellants therefore respectfully request that the substantive ground used in rejecting Claims 1-17, on appeal, made by the Examiner, be reversed by the Board of Patent Appeals and Interferences.

If any additional fee is due, the amount of such fee may be charged to Deposit Account No. 01-1000, Ref. No. 06-0561.

Respectfully submitted,

By: _____

Barry J. Schindler
Registration No. 32,938
Attorney for Applicants
GREENBERG TRAURIG, LLP
200 Park Avenue
New York, NY 10166
Tel.: (212) 801-9200